

Appl. No. 10/517,689  
Amendment and/or Response  
Reply to Office action of 14 June 2006

Page 6 of 11

### **REMARKS/DISCUSSION OF ISSUES**

Claims 1-18 remain pending in the application.

Please reconsider and reexamine this application in view of the following Remarks.

#### **35 U.S.C. § 102**

The Office Action rejects claims 1-18 under 35 U.S.C. § 102(e) over Rosenberg et al. U.S. Patent Publication 2006/0109183 ("Rosenberg").

Applicants respectfully submit that all of the pending claims 1-18 are patentable over Rosenberg for at least the following reasons.

##### **Claim 1**

Among other things, the antenna of claim 1 includes two resonant **printed** wiring structures for use in high-frequency and microwave range, each printed wiring structure including: a first **printed** wire on the end face extending from a first one of the side faces to a second one of the side faces along one of the edges of the end face, a second **printed** wire disposed on the end face in parallel to and spaced apart from the first printed wire, and also extending from the first side face to the second side face, and a third **printed** wire disposed on the end face extending between the first printed wire and the second printed wire perpendicularly to the first and second printed wires to connect the first printed wire to the second printed wire.

Applicants respectfully submit that Rosenberg does not disclose an antenna including the recited first and second printed wiring structures. In particular, Rosenberg's wire structures do not include first and third **printed** wires disposed on the end face.

The Office Action cites element 32 in FIG. 2 of Rosenberg as supposedly corresponding to the recited first printed wire, and element 26 as supposedly corresponding to the recited first printed wire. Applicants agree that elements 26 and 32 are wires.

However, Rosenberg does not disclose that elements 32 and 26 are **printed** wires. Indeed, very clearly from inspection of FIG. 2, elements 32 and 26 are not,

Atty. Docket No. DE-020157

Appl. No. 10/517,689  
Amendment and/or Response  
Reply to Office action of 14 June 2006

Page 7 of 11

and cannot be, printed wires as there is no structure present on which they could possibly be printed! See also paragraph [0056] of Rosenberg at lines 58-65.

So, elements 32 and 26 in FIG. 2 of Rosenberg cannot correspond to the recited first and third printed wires of the first wiring structure of claim 1.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 1 is patentable over Rosenberg.

Claims 2-4 and 12-15

Claims 2-4 and 12-15 depend from claim 1 and are deemed patentable for at least the reasons set forth above with respect to claim 1.

Claim 5

Among other things, the antenna of claim 5 includes two resonant printed wiring structures for use in high-frequency and microwave range, wherein each printed wiring structure is subdivided into three printed wires where a first printed wire stretches out from the first to the second side face along the edge, a second printed wire stretches out from the second to the first end face, and a third printed wire is connected to the first printed wire and the first printed wire is connected to the second printed wire.

As explained above with respect to claim 1, Applicants respectfully submit that Rosenberg does not disclose an antenna including the recited first and second printed wiring structures. In particular, Rosenberg's wire structures do not include first and third printed wires disposed on the end face.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 5 is patentable over Rosenberg.

Claims 6-11

Claims 6-11 depend from claim 5 and are deemed patentable for at least the reasons set forth above with respect to claim 5.

Claim 16

Among other things, the printed circuit board assembly of claim 16 includes: (1) a printed circuit board; and (2) an antenna mounted on the printed circuit board,

Atty. Docket No. DE-020157

Appl. No. 10/517,689  
Amendment and/or Response  
Reply to Office action of 14 June 2006

Page 8 of 11

the antenna including a dielectric substrate having two larger end faces and four smaller end faces.

Applicants respectfully submit that Rosenberg does not disclose any such printed circuit board assembly.

The Office Action cites "printed circuit board (38)" of FIG. 2 as supposedly corresponding to the printed circuit board of claim 16, and cites "a dielectric material built on PCB [38]" as supposedly corresponding to the dielectric substrate of claim 16, citing paragraph [0040].

Applicants respectfully disagree.

At the outset, paragraph [0040] merely mentions "a dielectric material," not any dielectric material "built on PCB [38]." Indeed, there is no indication that paragraph [0040] is even referring to the embodiment of FIG. 2. In that regard, it is noted that Rosenberg variously refers to element 38 both as a PCB, and as a dielectric material, such that it is understood that the PCB and dielectric material of Rosenberg are one and the same element, not two separate elements as in the printed circuit board assembly of claim 16.

So Rosenberg cannot possibly disclose the printed circuit board assembly of claim 16.

Furthermore, claim 16 very clearly recites "a dielectric substrate having two larger end faces and four smaller end faces." The Office Action does not explain where or how the cited "dielectric material" that is supposedly "built on PCB [38]" of Rosenberg includes two larger end faces and four smaller end faces.

Additionally, the printed circuit board assembly of claim 16 includes an antenna, where the antenna includes two resonant printed wiring structures for use in high-frequency and microwave range, each printed wiring structure including: a first printed wire on the end face extending from a first one of the side faces to a second one of the side faces along one of the edges of the end face, a second printed wire disposed on the end face in parallel to and spaced apart from the first printed wire, and also extending from the first side face to the second side face, and a third printed wire disposed on the end face extending between the first printed

Atty. Docket No. DE-020157

Appl. No. 10/517,689  
Amendment and/or Response  
Reply to Office action of 14 June 2006

Page 9 of 11

wire and the second printed wire perpendicularly to the first and second printed wires to connect the first printed wire to the second printed wire.

As explained above with respect to claim 1, Applicants respectfully submit that Rosenberg does not disclose an antenna including the recited first and second printed wiring structures. In particular, Rosenberg's wire structures do not include first and third printed wires disposed on the end face.

Accordingly, for at least these reasons, claim 16 is deemed patentable over Rosenberg.

#### Claims 17 & 18

Claims 17 and 18 depend from claim 16 and are deemed patentable over Rosenberg for at least the reasons set forth above with respect to claim 16, and for the following additional reasons.

#### Claim 17

Among other things, in the printed circuit board assembly of claim 17, the first and second printed wiring structures of the antenna comprise silver paste.

Applicants respectfully submit that Rosenberg does not disclose such a feature.

The Office Action states that Rosenberg's printed wiring structures "inherently" comprise silver paste.

Applicants respectfully disagree.

M.P.E.P. § 2112 (IV) provides that:

EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ

Atty. Docket No. DE-020157

Appl. No. 10/517,689  
Amendment and/or Response  
Reply to Office action of 14 June 2006

Page 10 of 11

323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted).

(emphasis added)

Here, the Examiner has not provided any rationale or evidence tending to show inherency. Indeed, no such rationale or evidence exists! For example, Rosenberg very clearly teaches that its wires may be made of sheet metal (see paragraph [0056] at lines 58-65). So it is not possible that the wires inherently comprise silver paste.

Therefore, it is not possible for Rosenberg to disclose the printed circuit board assembly of claim 17.

Furthermore, in the printed circuit board assembly of claim 17, the antenna is mounted on the printed circuit board such that the end face of the antenna on which are disposed the first and second printed wiring structures is disposed directly on and immediately adjacent to the printed wiring board.

The Office Action states that such a feature is shown in FIG. 2. Applicants respectfully disagree. Indeed, while PCB 38 itself may include "end faces," the structure mounted on PCB 38 in FIG. 2 does not include end faces as recited in claim 17. So it cannot provide the rest of the features of claim 17, cited above.

Accordingly, for at least these reasons, claim 17 is deemed patentable over Rosenberg.

### CONCLUSION

In view of the foregoing explanations, Applicants respectfully request that the

Atty. Docket No. DE-020157

Appl. No. 10/517,689  
Amendment and/or Response  
Reply to Office action of 14 June 2006

Page 11 of 11

Examiner reconsider and reexamine the present application, allow claims 1-18 and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact Kenneth D. Springer (Reg. No. 39,843) at (571) 283.0720 to discuss these matters.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment (except for the issue fee) to Deposit Account No. 50-0238 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17, particularly extension of time fees.

Respectfully submitted,

VOLENTINE FRANCOS &amp; WHITT, P.L.L.C.

Date: 27 July 2006By: 

Kenneth D. Springer  
Registration No. 39,843

VOLENTINE FRANCOS & WHITT, P.L.L.C.  
One Freedom Square  
11951 Freedom Drive, Suite 1260  
Reston, Virginia 20190  
Telephone No.: (571) 283.0724  
Facsimile No.: (571) 283.0740

Atty. Docket No. DE-020157